

PDF hosted at the Radboud Repository of the Radboud University Nijmegen

The version of the following full text has not yet been defined or was untraceable and may differ from the publisher's version.

For additional information about this publication click this link.

<http://hdl.handle.net/2066/71941>

Please be advised that this information was generated on 2017-12-06 and may be subject to change.

Buddhist models of the mind and the common core thesis on mysticism

Henk Barendregt*

Dedicated to N.G. (Dick) de Bruijn for his 90th birthday

Abstract

We will present two Buddhist models of the mind: the Cover-up Model (CM) and the Abhidhamma Model (AM). The first is based on the author's experience with intensive *vipassana* (insight) meditation. The second is the author's interpretation of the Abhidhamma (compilation finished around 250 BC), as it has come to us through commentaries, Bodhi [2000] and Nyanaponika Thera [1998], and the living tradition of its teaching in Birma. The CM is a wide-spectrum model of the human mind in which mystical experience on the one hand and existentialist 'nausea' play a distinctive (complementary) role.

The CM is a will be interpreted in the AM. Ideas towards a putative interpretation of AM in neuroscience are being sketched. Also an interpretation of neuroses and psychoses from the point of view of the AM will be given.

As an application of the CM the Common Core Thesis (CCT), named as such in van Atten and Tragesser [2003] but also present in Staal [1975], stating that all mystical experiences have a common ground but a different 'metaphysical explanation', will be examined. Studying the mysticism of Brouwer and Gödel van Atten and Tragesser argue that if these two mathematicians-mystics are right, then the CCT cannot be valid. The CM also refutes the CCT, as it implies that there are two main classes of mystical experience: based on concentration or on insight.

1. Mystical experience

Mystics have experiences that for most people do not occur often in their daily life. This holds in many cases also for the mystics themselves. There is certainly an important component of euphoria in the experience. But it seems impossible to express the experience in ordinary language. Nevertheless, more than one third of the human population is reported to have had a mystical experience, see Hood et al. [2003].

When the mystics try to convey their experience, it is given different conceptual descriptions. These include feelings of unity (with the divine or all beings), alterations in time and space perception, loss of control, to mention a few. Early interest in psychology to understand these experiences include James [1902] and Leuba [1925].

The *common core thesis* on mysticism holds that all forms are in the end different ways to express the same. This thesis is mentioned under this name in van Atten and

*L.E.J. Brouwer Institute, Faculty of Science, Radboud University, Nijmegen, The Netherlands.

Tragesser [2003], but also in Staal [1975], who added that the “metaphysical underpinning may be different”. Studying the mysticism of Brouwer¹ and Gödel² van Atten and Tragesser argue that if these two mathematicians-mystics are right, then the CCT cannot be valid: for Brouwer mathematics conceals the mystical experience and for Gödel mathematics reveals it.

2. Forms of meditation and the cover-up model

This model is based on personal experience with insight meditation (also called *vipassana*), see Barendregt [1988] and [1996].

Two forms of meditation

First we explain what meditation and in particular vipassana is. Consciousness is considered as having a *content* and a *type*. While we see, for example, it starts with the experience of colours. This is an object of consciousness. This seeing can be accompanied with a type. Pleasure, sadness, desire are possible types of consciousness. Usually people are concerned with the object of consciousness. One often tries to optimize the contents of our consciousness. For example a man may strive for a nice house, a beautiful wife and a cool car. [These are male values and in women there are usually other ones.] This optimization of content is done with the often implicit assumption that one obtains as a consequence happiness and well-being, a positive type of consciousness. But the house may have a high mortgage, the wife may be opinionated and the car uses a lot of gas. One therefore becomes dependent on conditions.

In meditation one is not concerned with the content of consciousness, but with its type directly. There are many forms of meditation that can be divided into two main families. In *concentration meditation* one strives for improvement of the positive types of consciousness, like e.g. joy, loving kindness and compassion. In *insight meditation* one strives to the diminishing and eventually eradication of the negative types of consciousness, like hatred, fear and restlessness. It turns out that it is impossible to warrant permanently positive types of consciousness, as they require mental energy, while radical elimination of negative types is possible once and for always.

Concentration meditation

The high point of concentration meditation is one-pointedness, in which there is a serene bliss and equilibrium. This is a mystical state. But one may fall back to ordinary consciousness with its usual unpleasant types, including existential fear. The high point of insight meditation is the consecutive elimination of the negative types, first of all this existential fear. Therefore mystics like John of the Cross adhort us to go beyond the indulging in the bliss. But—as these mystics did experience—then one needs to go through *the dark night of the soul*.

¹1881-1966. See van Dalen [1999, 2005] for his biography.

²1906-1978. See Wang [1988] and [1996] for his biography.

Insight meditation

We have actual and potential consciousness. Seeing this sentence being written on a laptop is at this moment my actual consciousness. Having an itch in my toe is potential consciousness, as I do not experience it at this moment. Potential consciousness may become actual.

The cover-up model states the following.

1. In our potential consciousness there is a *process* having three features.
 - (a) Perception is fluctuating, chaotic;
 - (b) It is unbearable, nauseating;
 - (c) We have no control over these phenomena.

Traditionally these three features are called the *three (fundamental) characteristics* [of consciousness]. These are *anicca*, *dukkha*, *anatta*: non-permanence, suffering, selflessness. This means that there is an actual experience of chaos, nausea and uncontrollability. We would rather commit a crime than having to experience this process. The process is most probably the dark night of the soul as experienced by the mystics. Actually, everyone has his or her personal version of the process, depending on their personality (or karma as the Buddhists would say).

2. Usually we hide (*cover-up*) this process by our feelings and thoughts. Feelings of greed (wanting to get something), aversion (wanting to get rid of something), and attachment (wanting to keep something) have a temporary stabilizing effect on our consciousness. As we do not like the process of the three characteristics, we are addicted to this symptomatic cover-up and the necessary behaviour to cause these feelings and thoughts.
3. Using *discipline*, *concentration*, and notably *mindfulness* one can purify the process so that it disappears. This so called *cessation* is the goal of insight meditation.

Mindfulness consists of intended attention on the content and type of consciousness, together with the right distance. This distance should be there not in order to suppress the content or type, but in order to be able to observe them, without being sucked away by or into them. Mindfulness is a type of mind that can be trained. Similar to the regular training of a jogger, in which the muscles and stamina are being exercised, the insight meditator trains mindfulness and at the same time the concentration to keep it being present in the type of consciousness. *Concentration* is the skill to have some kind of consciousness (content and type) and to keep it. It may be compared to making a photograph of the content and type. Mindfulness on the other hand is making a movie of the various contents and types. For this filming one does need some concentration in order to keep doing it: carefully observing and not getting involved. One starts observing the breathing movements of the abdomen and keeps following them. If there is a hindrance, like boredom, that cannot be avoided, then one learns to switch mindfulness towards the hindrance (“O, there is boredom.”). In this way one is

mindful again. One develops during 10 day intensive retreats the capacity to be mindful for extended periods. Then one develops equanimity, calmness and bliss, even in the presence of the three characteristics. One surrenders and ‘cessation’ may happen. For more details on the path of insight meditation, see my two Buddhist Phenomenology papers of 1988 and 1996.

3. The AM

We will introduce the AM, a model of conscious cognition inspired by the the *Abhidhamma* and *Abhidharma*. The Abhidhamma (‘Higher Teachings’) is a canonical text from the Buddhist Theravada Pali Canon, dealing with what may be called psychology. The work consists of seven volumes comprising more than 5000 pages. It is quite technical and consists of many lists of concepts related to consciousness in all of its forms. Because of the concise form most people study the commentaries or subcommentaries (i.e. a commentary of a commentary). See e.g. Bodhi [2000] or Barendregt [2006]. In the later Mahayana Buddhism several additions have been made. These later works we refer to as the Abhidharma, the Sanskrit translation of the Pali word Abhidhamma.

Abhidhamma

The following aspects come from the Abhidhamma.

- Consciousness consists of a linear sequence of short consciousness moments called *cetas*. Each *ceta* lasts a short time interval, certainly much less than a second (the exact range of durations is to be investigated by science).
- Each *ceta* has a *content* (or *object*) and a *type*. The content of a *ceta* is related to what is seen, heard, smelled, tasted, felt, or pops up from memory. The type is related to how this is done; for example with joy or with anger, with an urge to act or with calm equanimity. Also intended actions are seen as contents of consciousness.
- Each *ceta* influences the next or a future *ceta*. The objects in the *cetas* are considered as side conditions. One speaks about causes and conditions, the *cetas* types being the causes and the objects the conditions. (Being hungry is related to a *ceta*-type, while seeing food to the available objects. The next *ceta* in which one comes to action to eat is the influenced *ceta*. In daily life, on the other hand, one often considers the seeing of the food as the cause of eating. In the Abidhamma the hungriness is considered as the cause, and the food as the condition of the resulting eating.) *Kamma* (karma) is the name of the ‘law of influence’ *cetas* have on future *cetas*.
- The contents of consciousness are divided into two classes: *rupa* (body; what is meant is perceived awareness of the physical senses) and *nama* (mind; for example coming from memory), depending on the sense where they come from: eye, ear,

nose, tongue and touch-sense provide the rupa contents; the mind provides the nama content, see Figure 1.

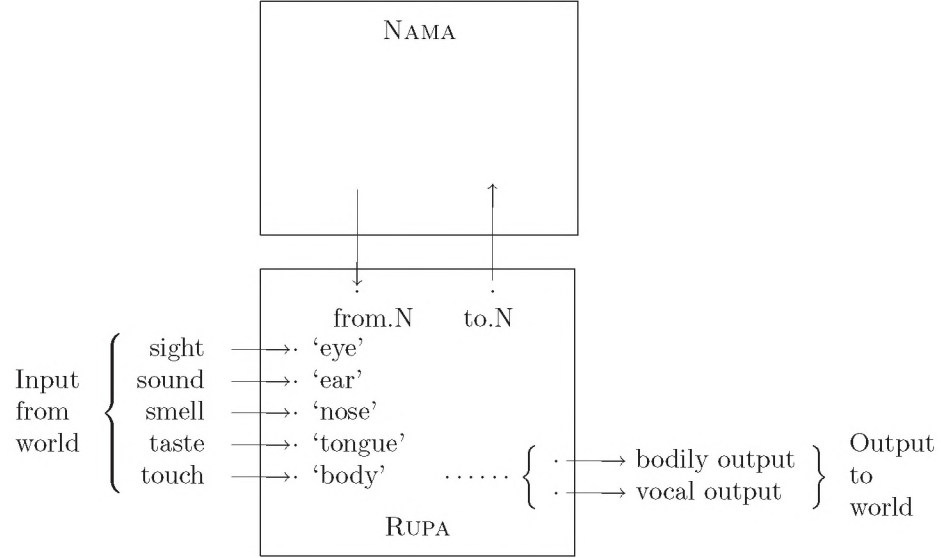


Figure 1: Nama-Rupa.

Here ‘from.N’ stands for input from Nama and ‘to.N’ for output to Nama. The nama part in this Figure should not be considered as a homunculus. It is the process of the stream of *cetas* that run according to strict rules of cause and effect, i.e. deterministically. The nama cannot exist if there is no object.

- The type of a *ceta* is determined by a set of subtypes called *cetasikas* acting in parallel. There are unwholesome (increasing suffering), neutral and wholesome (decreasing suffering) *cetasikas*. The unwholesome and wholesome are mutually exclusive: they cannot occur together.
- Some *cetas* provide stability in the *ceta* stream. This can be based on desire, negative feelings of neutral feelings. Indeed if we faal in love this gives a stable type of consciousness. The same effect is provided by angriness. An example of a neutral feeling is concentration (not yet accompanied by joy). All these types of consciousness are called ‘rooted *cetas*’. Also consciousness with mindfulness is rooted.
- Meditation improves the types of the *cetas*. Samadhi (concentration meditation) is directed towards more occurrences of wholesome *ceta* types; vipassana (insight meditation) based on mindfulness is directed towards less occurences of unwhole-some *ceta* types.
- Both strong concentration and mindfulness are ‘beautiful’ *cetasikas*. Combined they can give temporary relief from mental and physical hindrances. Concentration

is close to bliss and rapture. Mindfulness implies equanimity: not affected by fear and desire, without becoming indifferent, i.e. closing one's eyes for what happens.

- Freedom (enlightenment) consists of the permanent elimination of some or all (at the final step) unwholesome *ceta* types.
- The *cetas* with a nama or rupa content form sequences of cognitive units, called *vithis*. A rupa *vithi* consists of 17 *cetas* (8 *cetas* for preparation, 7 equal *cetas* (the *javana*) forming the awareness with its conditioning force to the future, and 2 for finishing off), while a nama *vithi* consists of just 12 *cetas* (this time just 3 *cetas* for preparation, as the content already is in the mind).
- Cognition consists of a sequence of four consecutive *vithis*: the first for input (both for nama and rupa), the second for obtaining information from memory (where was that observed before?), the third for naming the input and the fourth for getting the meaning of the input.
- The output of our body-mind system consists of bodily action, speech, and mental objects (being input of the mind). Only such actions with intention are recognized as output. These intentions are considered as contents of the rupa or nama *cetas*.
- Many of the *cetas* belong to the so called baseline, *bhavanga*. This is a sequence of *cetas* of which the content and type are equal and that cannot be changed during one's lifetime. What the content and type of the baseline *cetas* is differs from person to person and constitutes partly his or her personality. Each time there is sensory input and cognition there is a start of *vithis* with different *cetas*.

Abhidharma

One remarkable aspect of the Abhidhamma model is that *cetas* with their types can influence other *cetas* even in the distant future. How is this action at distance possible? This question has been addressed satisfactorily in the later Abhidharma (compiled during the period of Mahayana Buddhism after 100 AD), where a few essential additions are made, by Nagarjuna, Asanga [2001] and Vasubandhu [1988]. The main one is the notion of *alaya* or memory. This concept does not occur in the Abhidhamma, because that theory is concerned only with pure phenomenology, consciousness as it actually appears. Memory on the other hand is potential consciousness. Using memory a *ceta* can influence a *ceta* in the distant future by modifying the memory state. This lingers until the circumstances are ready and the effect takes place in the future. Also Brouwer's analysis of our fundamental mathematical intuition using memory and time shows the importance of this addition of the notion *alaya*.

A second addition in the Abhidharma is the notion of *paratantra*. In the old Abhidhamma one considers only a single sequence of *cetas* (*ceta* line) to describe someone's life. In the Abhidharma one considers the mutual interaction of several *ceta* lines. The laws of the single *ceta* lines remain valid. Interaction can be understood from the laws of input and output and *ceta* transitions. But a more comfortable level of abstraction is

to recognize that there are other *ceta* lines (of ‘other persons’) and that there is a new world in which the interaction takes place³.

A final important addition in the Abhidharma is called *manas* and is concerned with the mental capability to view a process as an entity, to make a reification.

We will not present evidence for this AM model of the mind, neither from phenomenology, nor from neuroscience. We do, however, give two of its plausible consequences.

Consequences of the AM

In traditional psychoanalysis one speaks about the neurotic core of the mind. Later psychoanalysts even speak about its psychotic core, see e.g. Eigen [1986] and Suler [1993]. We will see that both neuroses and psychoses are a natural side effects of the ‘operating system of the mind’ as stated in the AM.

Neurotic core

All *cetas* contain *cetasikas* of feeling and other components of the type. In a *vithi* this is enlarged by the 7 *ceta* occurrences in the *javana*. On the other hand several *vithis* together, as a long train of *cetas*, constitute the cognitive emotional process. The feeling present in the single *cetas* may prefer things different from the thoughts in the *vithis*. In this way an inner conflict may result. This is an interpretation of Freud’s description of neuroses as the conflict between the super-ego, at the level of cognition, and the *id* that directs our drives. Freud made a good point when he noticed the unscrupulous power of the *id* doing things that morality does not allow. This is an example of strong kamma that cannot be avoided. The organization of consciousness, as described in the Abhidhamma model, shows that we have a basic neurotic core in our mind.

Some forms of psychotherapy are directed to address the cognitive level of our mind by trying to modify one’s thinking, i.e. one’s *vithis*. One may learn that one should not desire some things that do not belong to us. But this does not help if there is inside us a *ceta* with strong *cetasika* that desires that very object. Working directly with the *cetas* and *cetasikas* may be a welcome and powerful addition to the mentioned forms of psychotherapy.

Neurotic core of the mind. If the *cetasikas* determine the type of mind, including feelings, while our thinking occurs in the cognitive process, then we may have processes with conflicting goals. For example, desire for an object of consciousness in the *cetasikas* and a thought that this desire is not allowed in the *vithi*. It is well known that in many cases the desire wins from the moral⁴.

³The addition of *paratantra* may be compared to the transition of computer science before and after 1969. In that year the internet was invented (consisting of 4 nodes only). Before the internet computers were rather ‘autistic’, having as task to compute say $\sqrt{2}$ in many decimals. In the internet era computers are interacting with other computers and new theories in computer science arose like the Calculus of Communicating Systems (CCS) and Process Algebra. These theories Extended existing computer science.

⁴In Christianity one says: ‘The spirit is willing, but the flesh is weak.’ A Buddhist would rather

Psychotic core

If consciousness is built up from discrete units smoothly blended together, then the integration mechanism may fail. Some psychoanalysts, speak about the basic *psychotic core* of the mind. This can be explained in a natural way from the AM. Falling apart from the apparent continuous consciousness to its fundamental form of *ceta*-based *vithis* can be seen as the underlying mechanism. This also explains why psychotic episodes tend to reoccur. If one has seen things as they are, than that insight remains.

Psychosis can be linked to phenomena of dissociation. In a light and innocent form a dissociation occurs in children (and older humans as well) doing the ‘repeated word game’. Taking a word like ‘yellow’, they speak it out repeatedly. After a while they notice that the word loses its meaning. In psychology one speaks about a ‘semantic fatigue’ or a ‘*jamaïs vu*’. Usually there is a close connection between a word as sound and the meaning of a word. These two come in consecutive *vithis*. After repeating the word many times, the sound function gets emphasized and may occur without an immediately following meaning, which may be absent for a short moment. The child has succeeded in separating the sound and the meaning that are both associated to a concept.

In stronger forms of dissociation the cognitive integration may be not functioning as usual, by being temporarily dysfunctioning or even being completely absent. From the Abhidhamma model this is quite understandable: cognition has to be formed by a process and this may temporarily not be active. For the common sense intuition the phenomenon can be quite startling. One loses grip, as the usual models of the world and of oneself slide away. As a reaction several mental alarms may start to ring. It is the presence of these alarms that makes the dissociation be felt as an extremely painful experience. Indeed, the alteration of perception of our body, our person or our world (desomatization, depersonalization, or derealization) may be utterly shocking. This ‘disidentification’ often is accompanied by a powerful feeling of lack of control.

In psychiatry the cause of psychoses can be a genetical predisposition (less strength in the *manas*), a developmental deficit or a side effect of an illness (e.g. caused by encephalitis). According to the AM a psychosis may be simply the insight that our consciousness is discrete. The meditative purification found via insight meditation consists in taking out the existential fear for the dissociation. One becomes like a parachute jumper or astronaut no longer afraid for the experience of falling. For this one first needs to be able to observe the three characteristics. In Buddhagosa [1999], a classical medieval manual on insight meditation, the following is written:

... impermanence does not become apparent because it is concealed by continuity. The characteristic of nausea does not become apparent because it is concealed by the postures.

... when continuity [of consciousness] gets disrupted by discerning rise and fall [breathing meditation], impermanence becomes apparent in its true nature. When the postures

say the oppsite: ‘The body can be without an orgasm, but the mind craves for it.’ This seems more accurate.

are exposed, ... the characteristic of nausea becomes apparent in its true nature.

Here ‘impermanence’ and ‘nausea’ refer to the first two of the three characteristics. After this has happened, (advanced) mindfulness may be applied to domesticate the fear.

One should not make the mistake by claiming that all psychoses can be cured by taking out the fundamental fear. But it certainly is worthwhile to investigate to what extent it is possible to cure or relieve them. See for example Podvoll [2003]. A personal account of a schizophrenic patient who did not get cured, but transformed her illness into something successfully manageable is Saks [2007].

An early indication that psychoses in some cases may be cured and can lead to creative personalities is described in Menninger et al. [1963], where the authors speak about patients becoming ‘weller than well’: *“Not infrequently we observe that a patient who is in a phase of recovery from what may have been a rather long illness shows continued improvement, past the point of his former ‘normal’ state of existence. He not only gets well, to use the vernacular; he gets as well as he was, and then continues to improve still further. He increases his productivity, he expands his life and its horizons. He develops new talents, new powers, new effectiveness. He becomes, one might say, ‘weller than well.’ ...Every experienced psychiatrist has seen it.... What could it mean? It violates our conventional medical expectations, so perhaps it is often overlooked and occurs more often than we know. It may contain a clue for better prevention and better treatment. ...Transcendence does occur. And perhaps it is not an exception but a natural consequence of new insights and new concepts of treatment.”*

4. Interpretations

We will first show how the Cover-up Model can be interpreted into the AM. This happens ‘theoretically’. But the logic of this is not the one that one finds in, say, mathematics. The style of explanation is part of a larger model as yet not fully made explicit⁵. After that we sketch how the Abhidhamma Model may be interpreted into neuroscience. This is hypothetical and needs further investigation based on empirical data.

From Cover-up to AM

The process of the Cover-up Model, consisting of the three characteristics chaos, nausea and selflessness (being beyond control) can be interpreted, using the AM, as being in a temporary lasting state in which the cetās do not fit well. This being similar to seeing an old movie of around 1920 in which there are missing picture frames making the story discontinuous. Actually this is only a weak metaphor. As the chains of cetās are forming our cognition, the discontinuity may cause impaired perception and even different forms of dissociation, e.g. desomatization, depersonalisation, derealization.

⁵When we learn elementary mechanics, the laws of Newton are not enough. In order to make deductions from them we have to use a style of reasoning that has not yet been made explicit. For example that forces are vectors that may be decomposed along a horizontal and vertical axis.

The cover-up aspect of the model may be interpreted as being caused either by *cetasikas* with strong concentration effects, like those coming from greed, aversion or attachment, or by strong cognition (thinking), as being formed by coherent *vithis*. Coherent in the sense of fitting well together and forming a strong chain. The adequacy of these thoughts may be lacking. So the emotional cognitive mechanism holds us together. If we have adequate emotions and thoughts we are successful; if not we have a problem (that may be compensated by adequate coping).

The purification in the Cover-up Model is explained by the AM, by using its axiom that *cetasikas* like ‘greed’ may be eliminated. This is done using mindfulness, which is a *cetasika* giving stability to the *ceta* it resides in. So the method of purification exchanges the stabilizing *cetasikas* greed, aversion or attachment by mindfulness.

From AM to neuroscience

The translation from the AM to neuroscience could go as follows. The discreteness of consciousness is not surprising, as the action potentials are discrete as well. It could be the case that action potentials are too low level to constitute consciousness. An important aspect of consciousness (the binding of the input of different senses) is caused by synchronous firing of sets of neurons, as postulated by von der Malsburg. Again the resulting mechanism is discrete. Finally, it may be that consciousness is not coded by the action potentials of single or combined neurons. Resonating waves of action potentials may be the carrier. Again there we have a fundamental discrete mechanism.

The *cetasika*’s that cause a state that lasts (for a while) may be implemented by neuromodulators like peptides that act through volume transmission. The AM predicts that there are three clear classes of such molecules: for attraction, repulsion, and neutral feelings (wanting to continue).

Purification through mindfulness is a harder phenomenon to be explained. It may be that some representation of our input is available at another level and is processed at cortex level without having the limbic (emotional) implications that the ordinary input has. Purification through observing nibbana as object of consciousness is the hardest phenomenon to be explained. It may have to do with the foundation⁶ of consciousness, the ground for the qualia, whatever that may be. This foundation then gives stability, as it is always there.

The story can also be told in a different way. Perception and cognition of all the signals that come to us (either from outside or from the mind) have to create meaning. This is done by binding and reification, made possible by *manas*. For this reification some kind of binding neuropeptide may be necessary. Temporarily (or for longer periods) this capacity may be not functioning. Insight meditation is directed towards not being afraid of the resulting dissociation. This enables faster recovery of one’s capacity to bind and reify.

⁶It is not generally believed that it is necessary to have such a foundation of consciousness, e.g. not by Dennett [1991].

5. Brouwer vs Gödel and the Common Core Thesis

Conversations on mysticism with Gödel are known from Rucker [1983]. As stated before, Gödel considered mathematics as revealing mystical experience. This is consistent with the AM view if the mystical state is identified with the *jhana* or *mental absorption*. In this state the object and type of consciousness is kept constant. It is said that this is possible only if the object is a ‘concept’ and not a sensory input. Now mathematics consists of concepts *par excellence*. The conclusion seems justified that Gödel’s mysticism consisted of the states of high concentration. In the AM one mentions the following aspects of these states: initial and sustained mental application, rapture, bliss and equanimity. In the more advanced ‘formless absorptions’ one has phenomena that Gödel undoubtedly would have liked: ‘infinite space’, ‘infinite mind’, ‘nothingness’ and finally ‘neither perception nor non-perception’.

Brouwer [1948] on the other hand claimed that mathematics is concealing the mystical experience. For him the descending to the foundation of consciousness is essential. This cannot be done if the mind is occupied with concepts. According to the AM the purifying consciousness is obtained by viewing the ‘nibbana’. Also in the meditation tradition concepts are concealing the view of nibbana, because concepts reside in a *vithi*, while nibbana within a single *ceta*. In the later Abhidharma nibbana is equated by Nagarjuna, witnessed by Nandamalabhivamsa [2004], to pure consciousness, that is consciousness without object, which may be considered as the foundation of consciousness.

Although the state of high concentration is filled with extacy and bliss, its relief from suffering is only temporary. The view of nibbana provides a lasting liberation. Therefore, in the view of Nagarjuna, the foundation of consciousness is the liberating factor. This is very similar to Brouwer’s description of his mystical experience.

Therefore we can replace the CCT by the Dual Core Thesis (DCT): there are two important styles of mysticism: that of bliss and extacy of the concentration meditation and that of the permanent purification through insight meditation. Given this view it is not difficult to see it reoccurring in religious disputes, for example the incident around Hui Neng. The old fifth patriarch of Zen, Hung Jen, asked his monks to compose a poem to show their understanding of Zen, in order to choose a successor. The headmonk Shenxiu wrote:

*The body is a Bodhi tree,
the mind a standing mirror bright.
At all times polish it diligently,
and let no dust alight.*

This requires continued work and energy. The poem of Hui Neng, the kichen aid, was:

*There is no Bodhi tree,
nor a mirror bright.
Since all is fundamentally empty,
where can the dust alight?*

It was Hui Neng who got the job. Whether the story is a myth or based on reality is irrelevant. It is consistent with the DCT.

We list a few examples of opposing pairs of expressions related to mysticism, or the mystics themselves, as seen by the DCT. We shortly explain the notions. An absorption is a state of high concentration, often with a concept as object. During the liberation and a supramundane absorption the object of the *ceta* is nibbana, the foundation of consciousness. The expresion “Atman=Brahman” comes from Hindhu philosophy, in which the absorption state is given a high status, as Brahman is the highest god. Actually it is not much different than the “Mystical Union” (with God) in the Christian tradition. “Anatta” is the selfless state of Buddhism. The mystical state of Santa Teresa has a close similarity with erotical experiences. Saint John of the Cross warned that we should not indulge in them but go further. In order to do this one has to overcome the “dark night of the soul”, probably his expression for the three characteristics.

Concentration	Insight
Absorption	Liberation & supramundane absorption
Atman=Brahman	Anatta
Shenxiu	Hui Neng
Santa Teresa	Saint John of the Cross
Gödel	Brouwer

The main advantages of the myticism of insight meditation is that it has a lasting liberating effect and much less energy is required to obtain the state.

Brouwer’s mysticism and ethical views

Let us study better whether it is correct that we classify the mystical experience of Brouwer under that of insight meditation. The following citations come from Brouwer [1948].

1. *“Consciousness ... seems to oscillate ... will-lessly and reversibly between stillness and sensation.”*
2. *“[There are] three successive phases of the exodus of consciousness from its deepest home. Of these phases the naive one was opened with the creation of the world sensation, the isolated causal one with the setting in of causal activities, and the social one with being involved in cooperation with other individuals.*
3. *“... security is as unattainable as unworthy.”*
4. *“Power over fellow-creatures will be avoided. ... Eastern devotion has perhaps beter expressed this wisdom than any western man could have done. For instance in the ... Bhagavad-Gita ...: ‘A man should not hate any living creature. ... He must be free from the delusion of I and mine.’”*

In 1 Brouwer comes very close to the description of baseline and cognitive consciousness in the Abhidhamma. The ‘will-lessly’ corresponds to the fundamental doctrine of *anatta*: selflessness. In 2 description is given of the state of ‘bare-attention’, known from Buddhism, and the ones that are goal-directed, in the language of Brouwer by means of ‘*cunning acts*’, creating ‘*causal sequences*’ in order ‘*to obtain what is preferred*’. Brouwer also states later that it is not that easy to return from either form of causal activity to naive being, while return to baseline is doable: “*More [easy than the regression to the naive phase is a temporary] reflux to the deepest home leaving aside naivety, through the free-will-perception of detachment-concentration.*” In insight meditation the *intensional concentrated observation with detachment* is the main tool towards progress. Remarkably enough the meditator arrives first at a state of naive observation, before one reaches the deepest home of consciousness. For someone who is enlightened the route via the baseline consciousness is more easy indeed. Could it be thinkable that Brouwer has reached such a trade of mind? He was not such an easy person to get along with and had his own desires. In the AM one speaks about several levels (four in total) of enlightenment. Only at level three one has rooted out desire and anger. So it is well possible that Brouwer has reached the first or second level. This is consistent with statement 3, which is a necessary view in order to reach the first level of enlightenment. In statement 4 an important ethical implications of enlightenment is stated. Brouwer also draws some consequences. The first explains the intuition needed for mathematics.

5. “*By a move of time a present sensation gives way to another present sensation in such a way that consciousness retains the former one as a past sensation.*”
... “*Mathematics not bound to the world, can attain any degree of richness and clearness.*”

Science that “*reveals or playfully mathematizes naively perceptible forms and laws of nature*” is based on the naive phase of consciousness and is seen as pure.

6. “*Such science rejects human domination over nature, through its very reference.*”

If one wants to make cunningly use of what one has understood a price has to be paid.

7. “*In causal thinking and acting beauty will hardly be found.*”
8. “*Art and philosophy should not communicate with the state, [otherwise] they will lose their independence and degenerate.*”

And a final warning (also heard in different words in Brouwer [1905])

9. “*[M]ankind, possessed by the delusion of causality, will slide away in a deteriorative process of overpopulation, industrialization, serfdom, and devastation of nature, and ... when hereby first its spiritual and then its physiological conditions of life have been destroyed, it will come to an end like a colony of bacteria in the earth crust having fulfilled its task.*”

Now, in 2008, this warning starts to be heard, but it is as neglected by states as it was in 1904 and 1948.

Postscript

The Buddhist meditation tradition and its theoretical underpinning in the AM is not taken here as ‘sacred’. We treat it with a critical mind. What we did is based on our understanding and non-understanding and may for some part need to be reajusted. However, we feel confident about the DCT. The two classes of mystical experience come from concentration and insight meditation, respectively. Usually one does not speak about ‘mystical experience’ in the Western version of the tradition of insight meditation. Only for the concentration meditation one usually speaks about mystical experiences, thereby pointing at the mental absorbtions. However, after a succesful training in insight meditation there is the ‘fruit of the path’, also called ‘supramundane absorption’. This brings the yogi to the essence of consciousness and that is—at least in his description—what Brouwer experienced.

References

- Asanga [2001]. *Abhidharma Samuccaya*, Jain Publishing Company. Translated by Walpola Rahula and Sara Boin-Webb.
- van Atten, Mark and Robert Tragesser [2003]. Mysticism and mathematics: Brower, Gödel, and the Common Core Thesis, *Klarheit in Religionsdingen*, Leipziger Universitätsverlag, pp. 145–160.
- Barendregt, H.P. [1988]. Buddhist Phenomenology (Part I), *in*: M. dalla Chiara (ed.), *Proceedings of the Conference on Topics and Perspectives of Contemporary Logic and Philosophy of Science (Cesena, Italy, January 7-10, 1987)*, Clueb, Bologna, pp. 37–55. URL: www.cs.ru.nl/~henk/BP/bp1.html.
- Barendregt, H.P. [1996]. Mysticism and Beyond, Buddhist Phenomenology Part II, *The Eastern Buddhist, New Series XXIX*, pp. 262–287. URL: www.cs.ru.nl/~henk/BP/bp2.html.
- Barendregt, H.P. [2006]. The Abhidhamma Model of Consciousness AM_0 and some of its consequences, *in*: K.J. Gergen M.G.T. Kwee and F. Koshikawa (eds.), *Buddhist Psychology: Practice, Research & Theory*, Taos Institute Publishing, Taos, New Mexico, pp. 331–349. URL: ftp.cs.kun.nl/pub/CompMath.Found/G.pdf.
- Bodhi, Bikkhu [2000]. *A Comprehensive Manual of Abhidhamma*, Buddhist Publication Society, Sri Lanka. Based on the Abhidhamma commentary *Abhidhammattha Sangaha* by Acariya Anuruddha 12th century AD.
- Brouwer, L.E.J. [1905]. *Leven, kunst en mystiek*, J. Waltman Jr., Delft. English translation in *Notre Dame Journal of Formal Logic*, 37 (3), 381–429, 1996. URL: verandering.fol.nl/brouwer_oorspruitg.html for the English version.
- Brouwer, L.E.J. [1948]. Consciousness, philosophy and mathematics, *Proceedings of the 10th International Congress of Philosophy*, pp. 1235–1249. Also in Brouwer [1975].

- Brouwer, L.E.J. [1975]. *Collected works I. Philosophy and Foundations of Mathematics*, Noth-Holland, Amsterdam. Edited by A. Heyting.
- Buddhagosa, Bhadantacariya [1999]. *The Path of Purification*, Buddhist Publication Society. Original 5th century AD. Translated by Bhikkhu Nanamoli.
- van Dalen, Dirk [1999, 2005]. *Mystic, geometer and intuitionist. The life of L.E.J. Brouwer. Volume 1: The downing revolution; Volume 2: Hope and Disillusion*, Oxford University Press, Oxford.
- Dennett, D. [1991]. *Consciousness explained*, Little, Boston.
- Eigen, M. [1986]. *The Psychotic Core*, Jason Aronson, Northvale, NJ.
- Hood, Ralph W., Bruce Hunsberger, Richard Gorsuch and Bernard Spilka [2003]. *The Psychology of Religion: An Empirical Approach*, Guilford, New York.
- James, W. [1902]. *The Varieties of Religious Experience: A Study in Human Nature*, Simon & Schuster, New York.
- Leuba, J.H. [1925]. *The Psychology of Religious Mysticism*, Harcourt, New York.
- Menninger, K., M. Mayman and P. Pryser [1963]. *The Vital Balance. The Life Process in Mental Health and Illness*, Viking.
- Nandamalabhivamsa, U. [2004]. Personal communication.
- Nyanaponika Thera [1998]. *Abhidhamma Studies, Buddhist Explorations of Consciousness and Time*, Wisdom Publications.
- Podvoll, E.M. [2003]. *Recovering Sanity: A Compassionate Approach to Understanding and Treating Psychosis*, Shambhala Publications.
- Rucker, R. [1983]. *Infinity and the mind*, Birkhäuser, Basel.
- Saks, Elyn [2007]. *The Center Cannot Hold: My Journey Through Madness*, Harper & Row, New York.
- Staal, F. [1975]. *Exploring Mysticism. A Methodological Essay*, University of California Press, Berkeley.
- Suler, J.R. [1993]. *Contemporary Psychoanalysis and Eastern Thought*, State University of New York Press.
- Vasubandhu [1988]. *Abhidharmakosabhasyam*, Wisdom Books. Translated by Louis de la Vallee Poussin and Leo Pruden.
- Wang, H [1988]. *Reflections on Kurt Gödel*, MIT Press, Cambridge.
- Wang, H. [1996]. *A logical journey. From Gödel to philosophy*, MIT Press, Cambridge.